

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1-42. (Cancelled)

43. (Previously Presented) A device for minimally invasive medical treatment in a body of a patient, comprising:

a tubular member having a proximal end and a distal end;

a cryo therapy apparatus connected to the distal end of the tubular member, wherein the cryo therapy apparatus comprises a first balloon and a second balloon, the first and second balloons arranged to define an inner chamber and an outer chamber, at least a portion of the inner chamber being interior of the first balloon and at least a portion of the outer chamber being interior of the second balloon and exterior of the first balloon, a surface of the first balloon configured to retain a coolant within the inner chamber and a surface of the second balloon configured to retain the coolant within the cryo therapy apparatus if the first balloon fails; and

an optical sensor disposed within the cryo therapy apparatus for monitoring temperatures created by use of the cryo therapy apparatus from within the cryo therapy apparatus, the optical sensor coupled to a retractable member capable of moving independently of the cryo therapy apparatus;

wherein the cryo therapy apparatus is sized and arranged for vascular introduction.

44. (Previously Presented) The device of claim 43, further comprising a temperature quantification device in communication with the optical sensor.

45. (Cancelled)

46. (Previously Presented) The device of claim 43, wherein the optical sensor is positioned to observe ice or ice ball formation created by the cryo therapy apparatus.

47-48. (Cancelled)

49. (Previously Presented) The device of claim 43, wherein the optical sensor is disposed at least partially within a lumen defined in the tubular member.

50-51. (Cancelled)

52. (Currently Amended) A device for minimally invasive medical treatment in a body of a patient, comprising:

a tubular member having a proximal end and a distal end;
a cryo therapy apparatus connected to the distal end of the tubular member and comprising a first balloon and a second balloon, the first and second balloons arranged to define an inner chamber and an outer chamber, at least a portion of the inner chamber being interior of the first balloon and at least a portion of the outer chamber being interior of the second balloon and exterior of the first balloon, a surface of the first balloon configured to retain a coolant within the inner chamber and a surface of the second balloon configured to retain the coolant within the cryo therapy apparatus if the first balloon fails and prevent loss of the coolant to the body of the patient; and

an optical imaging apparatus near the distal end of the tubular member configured to monitor detect temperatures resulting from use of the cryo therapy apparatus, wherein the optical imaging apparatus includes a detector in a predetermined positional relationship to an emitter;

wherein the cryo therapy apparatus is sized and arranged for vascular introduction.

53-58. (Cancelled)

59. (Withdrawn) The device of claim 43, wherein the optical sensor comprises an infrared optic sensor.

60. (Withdrawn) The device of claim 43, further comprising a fluorescing marker band positioned to permit locating the device during an internal medical procedure.

61. (Withdrawn) The device of claim 43, wherein the optical sensor comprises a detector in predetermined positional relationship to an emitter.

62. (Withdrawn) The device of claim 43, wherein the cryo therapy apparatus comprises an expandable balloon defining an interior volume in fluid communication with a coolant supply lumen.

63. (Withdrawn) The device of claim 62, wherein the balloon is rigidly attached to the tubular member.

64. (Previously Presented) The device of claim 65, wherein the optical imaging apparatus detects temperatures resulting from use of the cryo therapy apparatus from within the cryo therapy apparatus.

65-66. (Canceled)

67. (Currently Amended) The device of claim [[66]] 52, wherein the emitter is configured to emit energy from within the cryo therapy apparatus and the detector is configured to detect the energy.

68. (Previously Presented) The device of claim 67, wherein the emitter is configured to emit light, infrared energy, or ultrasonic energy.

69. (Currently Amended) The device of claim [[65]] 52, wherein the optical imaging apparatus is disposed at least partially within the tubular member.

70. (Currently Amended) The device of claim [[65]] 52, further comprising a temperature quantification device in communication with the optical imaging apparatus.

71. (Currently Amended) The device of claim [[65]] 52, wherein the optical imaging apparatus is positioned to observe ice or ice ball formation created by the cryo therapy apparatus.

72. (Currently Amended) The device of claim [[65]] 52, further comprising a fluorescing marker band positioned to permit locating the device during an internal medical procedure.

73. (Currently Amended) The device of claim [[65]] 52, wherein the optical imaging apparatus is an infrared optical sensor.